

J. F. CAMERON.

FLOOR CLEANING MACHINE.

No. 348,317.

Patented Aug. 31, 1886.

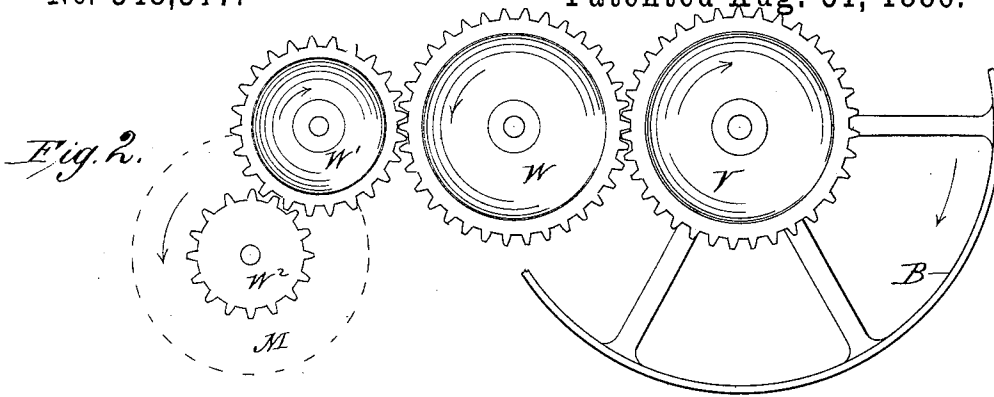


Fig. 3.

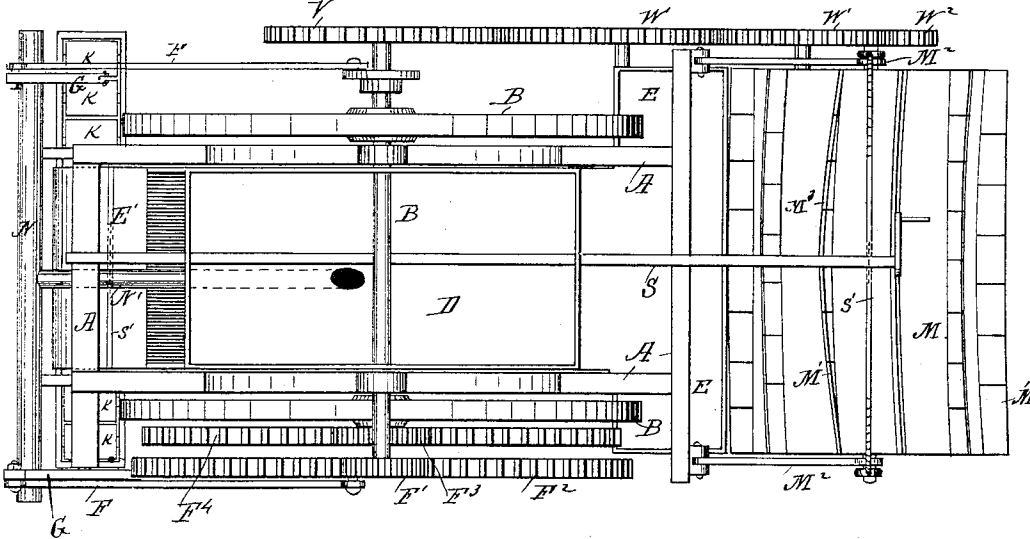
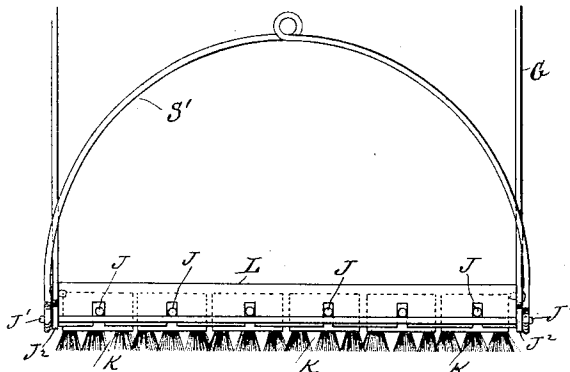


Fig. 4.



WITNESSES:

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JOHN F. CAMERON, OF NEW YORK, N. Y.

FLOOR-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 348,317, dated August 31, 1886.

Application filed May 5, 1885. Serial No. 164,499. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. CAMERON, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Floor-Cleaning Machines, of which the following is a description.

This invention relates to that class of floor-cleaning machines which are rolled along the floor, carrying water and operating scrubbing-brushes; and its object is to adapt both the scrubbing-brushes and a series of wipers to adjust themselves automatically to the floor, whether the same be even or uneven, and to communicate from the drive-wheel to the brushes an easy reciprocating motion.

To this end my invention consists in the construction and combination of parts forming a floor-cleaning machine, hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a left-hand side elevation of my machine complete. Fig. 2 is a right-hand side view of the train of gearing which runs the wiping-wheel. Fig. 3 is a plan view of the machine, and Fig. 4 is a rear elevation of the scrubbing-brushes and their carrier.

A represents the frame of the machine, which is mostly made of iron, mounted on a pair of wheels, B, which are the drive-wheels of all the machinery, the rear end being supported on caster-wheels C, by which means the reservoir D and the settling-pan E may be maintained in a level position, so as not to spill water carried therein.

The scrubber consists of a series of brushes, K, or other suitable scrubbing devices, carried in a frame, L, by means of tangs J, which fit loosely in slots in the under edge of the cross-bars of the said frame L, and are retained in the frame by means of rods J', passing under the said tangs. The scrubbers are free to follow the contour of the floor, each brush playing vertically independently of those beside it. The whole series of brushes or scrubbers is caused to vibrate longitudinally to the path of the machine by means of levers G, pivoted at their lower ends upon the scrubber-frame at L', pivoted to the frame A at one-third the height of the lever and connected at its upper end with a crank on a pinion, F', by a pitman, F. This crank is speeded up to give the re-

quisite speed of vibrations to the scrubbers by means of a spur-wheel, F², on the axle of which is a pinion, F³, receiving motion from the spur-wheel F¹, which is attached to the axle of the drive-wheels B, and is just enough smaller than the drive-wheel to clear the floor. There are about sixteen double strokes of the levers G to one revolution of the drive-wheels. The shaft of the pinion F' extends across the machine, and is provided with a crank at its opposite end, whereby two levers, G, and two pitmen, F, are employed to vibrate the two ends of the scrubber-frame. The rods J' are supported at their ends in end pieces, J², connected with a shaft, S, by bail and chain S'. By turning the rod S the chain S' is wound up, raising the ends J², the rods J', and the scrubbers resting by their tangs on the said rods, so that the scrubbers may be raised from the floor when the machine is to be wheeled along, but not used. Water is carried in a tank, D, and delivered to a sprinkler, N, by a spout, N'.

N² is a stop-cock by which water may be admitted to or stopped from the sprinkler.

The floor-wiper consists of a drum, M, journaled in arms M², which are pivoted to the frame A and connected by a bail and chain, M³, with the shaft S, to be wound thereon. By turning the shaft S both the scrubber and wiper may be raised above the floor out of work, or be thrown into work.

M' represents a series of buckets projecting radially from the cylinder M. Each bucket is curved, as shown in Fig. 3, and I divide each bucket into a series of short sections, so that in case any one section meets an obstruction—such as a nail-head protruding from the floor—that section may yield and save the bucket from being torn, and the separate sections may spring independently of each other, to follow the contour of the floor. The wiper is revolved in a direction opposite to the revolution of the drive-wheels by means of a train of gears, W W' W², connecting with a wheel, V, on the drive-wheel shaft smaller than the drive-wheels.

Q is a curved apron hung at the rear edge of the pan to drag on the floor as a guideway, up which the wiper may carry dirty water from the floor at the rear of the machine into the settling-pan E. This pan at its rear end is the full width of the wiper, as shown in Fig. 3, to receive water therefrom; but it is narrower midway, to

pass forward between the wheels, and is connected by an overflow-spout, E, with the sprinkler N, so that the clear water at the top may be returned in front of the brushes for
5 second use.

U is a discharge-pipe for the settling-pan, and T is a water-supply pipe leading from the tank into the pan to assist in cleaning it.

What I claim as my invention, and desire
10 to secure by Letters Patent, is—

1. The combination, in a floor-cleaning machine, of a series of scrubbers fitted side by side across the machine in vertical slots in a frame, substantially as shown and described.

15 2. The combination of a frame provided with pivots at its ends and carrying floor-scrubbers, a vertical lever pivoted thereto and to the frame of the machine, drive-wheels for the machine, a crank and pitman connected with the said lever, and gear-wheels connecting the said crank
20 and drive-wheels, substantially as shown and described.

3. The combination, with a frame having a series of vertical slots in its cross-pieces, of a series of scrubbers fitted in said frame and slots,
25 a pair of rods passing beneath the portions of

the scrubbers which enter the slots, end pieces joining the said rods, a crank-shaft journaled longitudinally on top of the machine, and chains connecting the said shaft with the said
30 end pieces, substantially as shown and described, whereby the scrubbers may be raised in their slots up from the floor.

4. The combination of a frame mounted on wheels, scrubbers, substantially as described, 35 carried by the frame, a cylinder with wipers, also carried by the frame, a crank-shaft journaled horizontally and longitudinally on the frame, and bails and chains connecting both the scrubbers and the wiping-drum with the
40 said crank-shaft, substantially as shown and described, whereby both the scrubbers and wiping-drum may be simultaneously raised from the floor, for the purpose specified.

The above specification of my invention 45 signed by me in the presence of two subscribing witnesses.

JOHN F. CAMERON.

Witnesses:

W. X. STEVENS,
SOLON C. KEMON.